

NON-PUBLIC?: N
ACCESSION #: 9406030079
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Sequoyah Nuclear Plant (SQN), Unit 1 PAGE: 1 OF 5

DOCKET NUMBER: 05000327

TITLE: Turbine Trip Followed by a Reactor Trip as a Result of a
Loss of a Main Feedwater Pump
EVENT DATE: 05/01/94 LER #: 94-008-00 REPORT DATE: 05/25/94

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 50

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR
SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
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Licensing

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

On May 1, 1994, at 0140 Eastern daylight time, with Unit 1 in power operation at approximately 50 percent power, the turbine tripped followed by a reactor trip as a result of the loss of the 1A main feedwater pump (MFP). Prior to the event, the 1B MFP was out of service for maintenance. During clearance tagging in support of the maintenance work on the 1B MFP oil pump, an assistant unit operator inadvertently deenergized the running oil pump on the in-service 1A MFP. The loss of the oil pump and the subsequent drop in the oil pressure resulted in a trip of the operating MFP. With both MFPs in a tripped condition, a turbine trip and the subsequent reactor trip was initiated. The cause of the event was personnel error. Appropriate disciplinary action was taken with the involved individual.

END OF ABSTRACT

I. PLANT CONDITIONS

Unit 1 was in power operation, Mode 1, at approximately 50 percent power.

II. DESCRIPTION OF EVENT

A. Event

On May 1, 1994, at 0140 Eastern daylight time (EDT), the turbine tripped followed by a reactor trip as a result of the loss of the 1A main feedwater pump (MFP) (EIIS Code SJ). Prior to the event, the 1B MFP was out of service for maintenance. During clearance tagging in support of the maintenance work on the 1B MFP oil pump (EIIS Code SL), an assistant unit operator inadvertently deenergized the running oil pump on the in-service 1A MFP. The loss of the oil pump and subsequent drop in the oil pressure resulted in a trip of the operating MFP. With both MFPs in a tripped condition, a turbine trip and the subsequent reactor trip was initiated.

B. Inoperable Structures, Components, or Systems that Contributed to the Event

The 1B MFP was out of service for oil system maintenance. With this MFP already in the tripped condition, the trip of the second MFP resulted in the turbine trip followed by a reactor trip.

C. Dates and Approximate Times of Major Occurrences

May 1, 1994 The alternating current oil pump on the 1B MFP at 0126 EDT was started at the request of Maintenance personnel.

May 1, 1994 The oil pump on the 1B MFP was secured in at 0131 EDT preparation for retagging and completion of maintenance work on the oil system.

May 1, 1994 The turbine building assistant unit operator at 0140 EDT inadvertently opened the breaker of the running oil pump on the 1A MFP. The 1A MFP trips on low oil pressure. With both MFPs tripped, the main

turbine trips followed by a reactor trip.

D. Other Systems or Secondary Functions Affected

None.

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E. Method of Discovery

The MFP trip and subsequent turbine and reactor trips were annunciated on the main control room panels.

F. Operator Actions

Control room personnel responded as prescribed by emergency procedures. They promptly diagnosed the plant condition and took actions necessary to stabilize the unit in a safe condition and maintained the unit in the hot standby mode (Mode 3).

G. Safety System Response

The plant responded to the trip of the 1A MFP as designed. After the reactor trip, Tavg dropped to a minimum of approximately 534 degrees Fahrenheit (F). The additional cooldown was a result of the loss of the hotter main feedwater in conjunction with the low beginning of life core decay heat levels. Emergency boration was performed and adequate shutdown margin was maintained. Tavg ultimately stabilized at about 548 degrees F. The pressurizer level dropped rapidly from 38 percent before the trip to approximately 17 percent following the reactor trip. A letdown isolation occurred as a result of the selected level channel going below 17 percent. A second letdown isolation occurred approximately two hours after the reactor trip and stabilization of the unit, during sampling of the reactor coolant system. The sample point is tied directly to a sense line used for pressurizer level. The sample flow was sufficiently high to drop the pressure in the sense line resulting in the letdown isolation.

III. CAUSE OF EVENT

A. Immediate Cause

The immediate cause of the event was loss of the 1A MFP as a

result of loss of oil pressure.

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B. Root Cause

The root cause of the event was personnel error. The turbine building assistant unit operator inadvertently manipulated the breaker for the 1A MFP oil pump instead of the 1B MFP oil pump during tag out performance. These breakers are located on the same electrical distribution board with one breaker directly above the other. Upon manipulating the wrong breaker the operator heard the steam dump valves operate, immediately realized his error, and reenergized the oil pump. However, oil pressure had already dropped below the trip setpoint and the 1A MFP tripped as designed.

C. Contributing Factors

During the equipment tag out, the involved individual did not reapply the self-check process. He had located the correct breaker to be manipulated, placed his hand on the breaker, and was reverifying the tagging instructions when the instruction sheet folded over. He removed his hand from the breaker, straightened the instruction sheet, reverified the instructions, and then reached out and manipulated the wrong breaker.

IV. ANALYSIS OF EVENT

Plant responses during and after the unit trip were consistent with responses described in the Final Safety Analysis Report and accordingly, the event did not adversely affect the health and safety of plant personnel or the general public.

V. CORRECTIVE ACTION

A. Immediate Corrective Action

Control room personnel responded as prescribed by emergency procedures. They promptly diagnosed the plant condition and took action necessary to stabilize the unit in a safe condition.

B. Corrective Action to Prevent Recurrence

The appropriate disciplinary action was taken with the involved

individual.

VI. ADDITIONAL INFORMATION

A. Failed Components

None.

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B. Previous Similar Events

Review of previous events identified one other similar event (LER 50-28/84008) associated with a unit trip as a result of the loss of an MFP. In that event an operator inadvertently stopped the running oil pump on the 2A MFP instead of on the 2B MFP. The cause of that event was personnel error. To address the failure of the individual to again self-check as described in this LER, Operations' management has issued a standing order addressing the self-check process. Emphasis was placed on the need to repeat the self-check process any time the individual is disrupted during self-check implementation. Additionally, within the human performance enhancement process, the need for individuals to perform a recheck whenever a job distraction occurs is being emphasized. Site management continues to reinforce correct implementation of the self-check process through stand-down meetings, safety meetings, and coaching/counseling.

VII. COMMITMENTS

None.

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TVA

Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee
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Ken Powers

Vice President, Sequoyah Nuclear Plant

May 25, 1994

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk

Washington, D.C. 20555

Gentlemen:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT UNIT 1 - DOCKET NO. 50-327 - FACILITY OPERATING LICENSE DPR-77 - LICENSEE EVENT REPORT (LER) 50-327/94008

The enclosed LER provides details concerning an automatic reactor trip during power operation. This event is being reported in accordance with 10 CFR 50.73(a)(2)(iv) as a condition that resulted in the automatic actuation of engineered safety feature, including the reactor protection system.

Sincerely,

Ken Powers

Enclosure
cc: See page 2

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May 25, 1994

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